

**Docket No.: 83974-US2**

**Application Serial No. 10/750,633**

**Amendments to the Drawings:**

5 sheets of Replacement drawings (**Figures 1-5**) in compliance with 37 CFR 1.121(d) are provided herewith. **Figure 2** is now labeled as prior art.

**Remarks/Arguments**

Claims 2-3 and 5-35 are currently in the application. Claims 1 and 4 have been cancelled. Claims 2, 3, 7, 8, 15, 16, 23-24, 31 and 32 have been amended. Applicants thank the Examiner for the indication of allowable subject matter, but will refrain at this time from making the suggested claim amendments based on the arguments given below regarding the base claims. Support for the amendment to the claims is in the specification and claims as filed, and also as indicated below. Applicants will now address the rejections in the Office Action, as follows.

**The rejections under 35 USC § 112, second paragraph**

Claims 7, 8, 15, 16, 22-24, 31 and 32 are rejected for containing improper punctuation. Claims 7, 8, 15, 16, 23-24, 31 and 32 have been amended as shown to correct the deficiencies pointed out in the Office Action. Claim 22 has not been amended because Applicants were unable to identify a deficiency. It is respectfully submitted the claims are now acceptable under 35 USC § 112.

**The rejection under 35 USC § 102(b)**

Claims 1-9 are rejected as anticipated by Erskine (US Pat. No. 6,351,307). The rejection as to the present claims is respectfully traversed.

The claims are directed to a dispersing Fourier Transform interferometer comprising a Fourier Transform Spectrometer, a dispersive element, and a metrology system for determining optical path lengths internal to the interferometer.

Erskine does not disclose an interferometer with a metrology system. The Office Action cites Erskine at col. 11, lines 37-38 (31) for this element, but what Erskine teaches is merely a PZT device capable of moving the interferometer mirrors a small distance on the order of a few micrometers, jiggling the optical path difference by just a few wavelengths. In other words, Erskine's is a displacement means, not a measuring or metrology system unlike the present invention. Therefore unlike the present invention

Erskine is not capable of measuring ultra-precise spectra. The metrology system of the invention is “full aperture”, in that it traverses or travels the same beam path (from beam splitting to beam recombination, again unlike Erskine) as the science light source, and determines a path difference (see specification, p. 10, line 14-p. 11, line 23). As a result, vibrations, optical defects, and other sources of error introduced into the science light source are also detected and corrected by the metrology system. Erskine does not have this capability since it does not provide a metrology element in its system.

The Office Action also states regarding claim 3 that Erskine never mentions a processing computer, but nonetheless infers its existence. Since Erskine does not disclose a metrology system therefore it does not require a processor as in the present invention, therefore there is nothing inherent about it. There is no mention made or inference possible in Erskine at column 12, lines 60-67 of a processor configured with the algorithm as in the invention.

The Office Action further states that the remaining limitations found in claims 5-8 are functional and can be met by prior art structural capability. Erskine as discussed above does not disclose a metrology system or a processor utilizing the claimed algorithm based on the metrology system that is the subject of these claims. Claim 5 is directed to the algorithm configured in the processor, which is therefore not merely a functional limitation nor one disclosed in Erskine. Claims 6-8 further modify the processor/algorithm and therefore are not just functional limitations within the capabilities of Erskine, and are not disclosed in Erskine.

A rejection on the grounds of anticipation is proper only when every limitation recited in a claim is disclosed in the single reference. Since the cited reference does not fulfill this requirement, Applicant respectfully requests that the rejection on this ground now be withdrawn.

The rejection under 35 USC § 103

Claims 10-28 and 33-35 are rejected as obvious over Erskine in view of applicant's prior art figure 1. The rejection as to the present claims is respectfully traversed.

**Docket No.: 83974-US2**  
**Application Serial No. 10/750,633**

The arguments made above relative to claims 1-9 and the rejection over Erskine also apply to the present rejection, in that these claims also recite a metrology system not disclosed in Erskine, and Erskine does not teach or suggest a processor configured as in the present invention (claims 12, 20, 28) or provide functional aspects found in claims 13-16 and claims 21-24. Applicants reiterate that Erskine does not measure an optical path difference, therefore the comment in the Office Action at p. 8, lines 1-3 that Erskine "determines the optical path difference by the current which drive the PZT actuator 31" is not relevant to the patentability of the rejected claims.

Given the various grounds of rejection applied to the different claims, it appears that overall these rejections are based more on the Applicants' own specification, not the prior art. Rejections on such grounds are impermissible hindsight rejections since these are grounded more on the invention's teaching than the prior art.

The base claims and the dependent claims are allowable for the reasons set forth above, and the dependent claims also for the additional limitations recited therein.

Applicants respectfully submit that the claims presently submitted are allowable for the reasons stated above and request that a timely Notice of Allowance be issued in the case. The Examiner is invited to contact Applicants' attorney at the number indicated below should further discussion help advance the case to issuance.

Kindly charge any additional fee, or credit overpayments, to Deposit Account No. 50-0281.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "L. George Legg", written over a horizontal line.

L. George Legg  
Reg. No. 34,208  
Attorney for Applicants

Date: May 25, 2006  
Telephone: 202-404-1559